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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/502,133	02/11/2000	Harold E. Helson	103544.127	4787

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EXAMINER	
MAKHDOOM, SAMARINA	
ART UNIT	**PAPER NUMBER**
2123	

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N . 09/502,133	Applicant(s) HELSON, HAROLD E.
	Examiner Samarina Makhdoom	Art Unit 2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The Appendix of the disclosure is objected to because it is over 10 pages of program code. The Appendix may be submitted on microfiche, CD, or be incorporated into the drawings of this application.

Appropriate correction is required.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. Applicant is encourage to provide a copy of the following:

H.E. Helson, "Structure Diagram Generation," in "Reviews in Computational Chemistry," K. B. Lipkowitz and D. B. Boyd, Eds., Wiley-VCH, New York 1999, Vol. 13 at 313-398.

The ChemDraw program on Page 1, line 4 of the Appendix.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Weininger, U.S. Patent No. 5,434,796, July, 18, 1995.

As per Claims 1, 5, and 9, Weininger teaches a method for use in deriving a chemical structure diagram, comprising:

identifying, from a connection table for a chemical structure, an instance of chemical structural symmetry in the chemical structure (See Col. 8, lines 19-60 for the use of connection tables for representing molecular (or chemical) structure. Also see abstract for evaluating the physical and theoretical properties of a chemical structure. These properties are a function of chemical symmetry in the chemical structure);

and expressing the instance of chemical structural symmetry in the chemical structure diagram (See Figure 9A-N for expressing the molecular structure in a chemical structure diagram and corresponding text in Col. 14, lines 21 et Seq.).

As per Claims 2, 6, and 10, Weininger teaches a method for use in deriving a chemical structure diagram, comprising:

determining, from a first chemical structure diagram (See Figure 9A-N for expressing the molecular structure in a chemical structure diagram and corresponding text in Col. 14, lines 21 et Seq.),

a force term for increasing diagrammatic symmetry within the first chemical structure diagram (See Col. 3, lines 52-57for determining if the chemical structure is stable or the force terms are in equilibrium);

and applying the force term in a derivation of a second chemical structure diagram from the first chemical structure diagram, the second chemical structure diagram having more diagrammatic symmetry than the first chemical structure diagram (See Col. 7, line 50 to Col. 8, line 19 for generating chemical structure diagrams in iterations to determine whether the generated chemical structure (or second chemical structure) is stable).

As per Claims 3, 7, and 11, Weininger teaches a method for use in deriving a chemical structure diagram, comprising:

determining, from a first chemical structure diagram (See Col. 3, lines 52-57 for determining the chemical structure),

a parameter for use in producing the shape of an addition to the first chemical structure diagram (See Col. 2, lines 15-45 where the molecular shape is used with chemical structures);

producing the shape of the addition based on the parameter (See Col. 2, lines 15-45 for selecting molecules of similar shapes. Also see Col. 17, line 40 to Col. 18 line 14 for using shape fitting (a parameter for producing the shape) in chemical structures of a molecule);

and producing a second chemical structure diagram by adding the addition to the first chemical structure diagram (See Col. 17, line 41 to Col. 18, line 55 for evolving a new molecule (or second chemical structure diagram) from the first chemical structure).

As per Claims 4, 8, and 12, Weininger teaches a method for use in deriving a chemical structure diagram, comprising:

determining a first rectangle that defines a first portion of an available layout area (See Figure 3E steps 184 and 188 for generating a 3D model and computing the GRID computations and grid Field to fit the model; and corresponding text in Col. 18, line 56 to Col. 19 line 50. A rectangle is a grid field),

the first rectangle being of a sufficient size to enclose a first chemical structure diagram (See Col. 18, line 56 to Col. 19 line 50 for the GRID algorithm which allows the spaced points around a molecule to be fitted under a set of linear equations. And sub-process 18e that produces molecules optimized to fit the given 3D constraints);

determining a second rectangle that defines a second portion of an available layout area (See Figure 3E steps 184 and 188 for generating a 3D model and computing the GRID computations and grid Field to fit the model; and corresponding text in Col. 18, line 56 to Col. 19 line 50. A rectangle is a grid field. The 3D display process may be preformed for any of the iterations of molecular structures generated like the first and second chemical (molecular) structure),

the second portion being non-overlapping with the first portion (See Figure 12A & 12B for the generation of 2 figures in their rectangular portions that do not overlap and text in Col 21, line 17 to 40 for the description of the chemical structures),

the second rectangle being of a sufficient size to enclose a second chemical structure diagram (See Col. 18, line 56 to Col. 19 line 50 for the GRID algorithm which allows the spaced points around a molecule to be fitted under a set of linear equations. And sub-process 18e that produces molecules optimized to fit the given 3D constraints. The 3D display process may be

preformed for any of the iterations of molecular structures generated like the first and second chemical (molecular) structure);

and positioning the first and second chemical structure diagrams within the first and second portions, respectively (See Figure 12A & 12B for the generation of two figures (a first and second structure diagram) in their rectangular portions that do not overlap and text in Col 21, line 17 to 40 for the description of the chemical structures).

5. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Own Admission.

See specification Page 4, lines 1-7.

Also see Appendix Page 1, for RD_DesignRing(), RD_MakeSimpleCore(), RingTransit class, all written on 7/19/1996.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Venkataraman et al., U.S. Patent NO. 5,619,421 disclose a computer implemented process that determines the 3-D shape of ring-shaped molecules.

Cramer III et al., U.S. Patent No. 5,025,388 disclose comparative Molecular Field Analysis (CoMFA) is an effective computer implemented methodology of 3D-QSAR employing both interactive graphics and statistical techniques for correlating shapes of molecules with their observed biological properties

Morrison et al., Organic Chemistry, Allyn and Bacon, Inc. Boston, 1973, show how to determine chemical structure diagrams. Page 261-262.

Casey et al., "Optical recognition of chemical graphics," Proceedings of the Second International Conference on Document Analysis and Recognition, 20-22 Oct 1993, Page(s): 627 –631.

Barsamian, S.T.; Barsamian, T.K, "Dielectric phenomenon of living matter," IEEE Transactions on Dielectrics and Electrical Insulation, Volume: 4 Issue: 5 , Oct 1997, Page(s): 629 –643.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samarina Makhdoom whose telephone number is 703-305-7209. The examiner can normally be reached on Full Time on Tuesday, Thursday, Friday, and Sunday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J. Teska can be reached on 703-305-9704. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-0040 for regular communications and 703-305-0040 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

SM
January 12, 2003

CO Teska
2123
AU.